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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/624,785	07/25/2000	Atul Garg	E0852	7205

43534 7590 06/28/2004

MARK D. SARALINO (AMDS)
RENNER, OTTO, BOISSELLE & SKLAR, LLP
1621 EUCLID AVE
NINETEENTH FL
CLEVELAND, OH 44115-2191

EXAMINER

MUNOZ, GUILLERMO

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/624,785

Applicant(s)

GARG ET AL.

Examiner

Guillermo Munoz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-14, 16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-12, 14, 16, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 5 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Argument

Applicant's arguments, see pages 6-7, filed April 7, 2004, with respect to the rejection(s) of claim(s) 1-6, 8-14, 16 and 18-19 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made to claims 1-4, 6, 8-12, 14, 16 and 18-19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8-12, 14, 16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen in view of Brokish and Prater et al..

Regarding claim 1; Nguyen discloses all the subject matter claimed, note paragraphs 0010 and 0030, except Nguyen's system does not explicitly teach an analog to digital converter, additionally, Nguyen's system does not teach calculating filter output and coefficient update values simultaneously.

However, Nguyen disclose convergence time is a critical element in filter design, note paragraph 0007. Nguyen disclose stored coefficients are used for subsequent filter operations;

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and that a number of coefficient adjusting iterations are run until the coefficient reaches a threshold value, note paragraph 0010.

Prater et al. teach the use of an analog to digital converter for converting an input signal prior to processing by a channel equalizer (figure 4, element 506).

Brokish teaches an adaptive digital filter in a programmable DSP wherein in each clock cycle the invention calculates one term of the FIR filter output and updates a coefficient for an increase in power and time efficiency, note paragraphs 0014 and 0021

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to convert Nguyen's input signal with Prater et al.'s teaching of using analog to digital converter at the equalizer input, since Nguyen suggest in paragraph 0004 that the conversion removes noise prior to processing.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Nguyen's iteration process with Brokish's teaching of simultaneously calculation of filter output and coefficient updates, since Brokish suggest in paragraph 0008 that the result of this would reduce the number of clock cycles that it would take to update the coefficients.

Regarding claim 2, Nguyen further teach the claimed subject matter in figure 1, element 108.

Regarding claim 3, Nguyen further teach the claimed subject matter in paragraph 0029.

Regarding claim 4, Nguyen further teach the claimed subject matter in paragraph 0025.

Regarding claim 6, Brokish further teach the claimed subject matter in paragraph 0003.

Regarding claim 8, see claim 1.

Regarding claim 9, see claim 2.

Regarding claim 10, see claim 2.

Regarding claim 11, see claim 3.

Regarding claim 12, Nguyen further teach the claimed subject matter in paragraph 0010.

Regarding claim 14, see claim 6.

Regarding claim 16, see claim 1.

Regarding claim 17, Nguyen further teach the claimed subject matter in paragraph 0028.

Regarding claim 18, see claim 2.

Regarding claim 19, see claim 4.

Claim Objections

Claims 5 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 703-305-4224. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GM
June 15, 2004



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600